

REMARKS

Claims 1-32 are pending in the present application. Claims 1, 2, 13, 16, 28, 31, and 32 were amended. Reconsideration of the claims is respectfully requested.

Additionally, the abstract was replaced by a shortened version, as required by the examiner.

The examiner is thanked for the favor of an interview. The undersigned agent has amended the claims as shown in the proposed amendment and as further discussed in the interview.

35 U.S.C. § 103, Obviousness

It is noted that the independent claims have now been amended to more clearly recite the invention, an embodiment of which is shown in Figure 6A below.

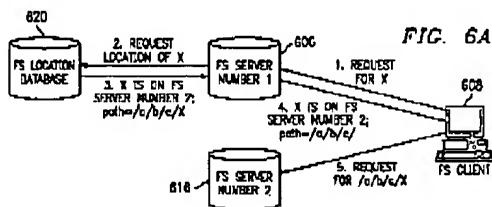


FIG. 6A

Although not the only embodiment of the invention, this figure clearly demonstrates several of the basic ideas of the invention as recited in the claims: (a) that the file system being sought by the client resides on a different server from the server originally queried; (b) that the original server is able to give the user the location of the server where the file system does reside, but without having to maintain the location itself; and (c) a file location database is used that has locations for files on more than one server, since it is able to refer the first server to a second server. These features are recited in many of the claims. Further, these features are not shown by the art relied on and it is submitted that by these amendments, the claims are made allowable, as will be further discussed below.

Kao and Pinkoski

Claims 1-4, 7-8, 16-19, 22-23, and 31 are rejected under 35 U.S.C. §103 as being unpatentable over Kao (U.S. Patent 5,870,734) in view of Pinkoski (U.S. Patent 5,742,817). This rejection is respectfully traversed.

Representative claim 1 reads,

1. (Amended) A method, in a requested file system server, for servicing a request, comprising:
 - receiving a request for a referencing object from a client, wherein the referencing object refers to a referenced file system that has been moved to a location on a different server;
 - using information from said referencing object to look up a location of the referenced file system in a separate data structure; and
 - returning a redirection message indicating the location of the referenced file system to the client.

The rejection states,

"With respect to claim 1, Kao teaches ... looking up a location of the referenced file system in a separate data structure (using look-up routine to search or find where the selected file in the hierarchical file system is. The hierarchical file system includes a plurality of separate directories or separate pathnames; see fig. 2, and col. 6, lines 41-58); ... Kao does not clearly teach returning a redirection message indicating the location of the referenced file system to the client.

However, Pinkoski teaches the transferring message indicating the existence of the alternate path name to be returned to the client or requester of the system (see figs. 7A-7C and col. 8, lines 8-65 and col. 5, lines 60-67 and col. 6, lines 1-18).

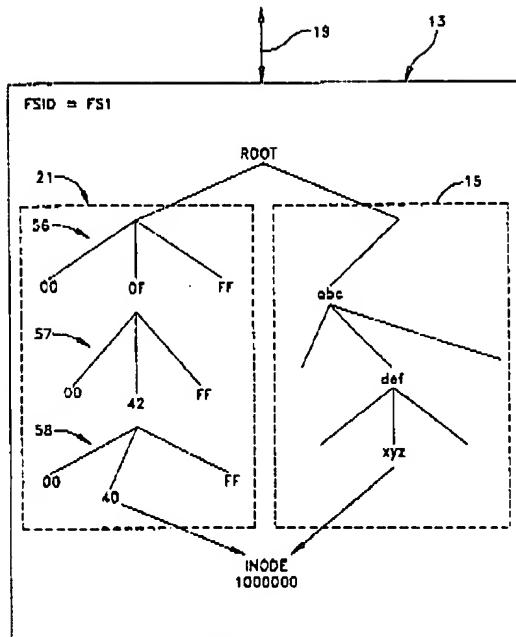
Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the teachings of Kao with the teachings of Pinkoski so as to enable to get the returning message for the alternative path name from the user / the network system. The motivation being to have a system receiving the request for manipulating the selected nodes or files or objects locating in the hierarchical file from the user of the computer network system."

It is asserted that the present claims show a number of distinctions over the art relied on: (a) neither Kao nor Pinkoski is discussing a file system that has been moved, as is now claimed; and (b) neither of the references relied on disclose using information found in the referencing object to look up the location of the file system in a file system location database, as is now claimed.

Kao and Pinkoski do not discuss a file system that has been moved

Figure 6A of the present application, reproduced above, shows client 608 first requests file X on Server Number 1 606, but after being redirected, client 608 is able to request file X from Server 2 616, where it now resides.

Pinkoski has been cited as providing a message redirecting the user to another location. However, as shown here by Figure 4, Pinkoski is disclosing an alternate route to reach a file that remains in the same place. While this alternate pathway may be shorter than the original pathway, the end location is the same.



This is further supported by Pinkoski, which discusses a

"file system in which client path names and unique numerical values identify each file and in which certain server operations return to a client in the network a file handle including the unique numerical value. The file system includes a first set of links for establishing correspondences between the client path names and unique numerical values. In accordance with this invention, a server uses the file handle during subsequent operations by converting the unique numerical value into an alternate path name by means of a second set of links for establishing correspondences between the alternate path names and the locations of the files in the file system.".

Thus, Pinkoski does not meet the limitations of the claims in this regard.

Kao has been relied on as disclosing “using look-up routine to search or find where the selected file in the hierarchical file system is”. This, in turn, has been equated to “looking up a location of the referenced file system in a separate data structure”. However, there is no suggestion in Kao that the file in question has been moved. Since this is what the disclosure and the claims is directed to, this is an important point.

Clearly, neither Pinkoski nor Kao have disclosed or suggested locating a file that has been moved and this rejection is overcome.

Kao and Pinkoski do not show using information in the referencing object to look up the location of the file system in a separate data structure

The claims now recite using information in the referencing object to look up the location of the file system in a separate structure. As the specification discloses, when a file system is movcd, the referencing object is left at the former location to provide a placeholder. This referencing object contains information that identifies the file system.

In turn, this information can be used to find the location of the file system in a separate structure that is set aside for this purpose. A regular directory structure does not work in this manner. While Kao and Pinkoski do disclose using a regular directory structure, these patents do not disclose "using information from said referencing object to look up a location of the referenced file system in a separate data structure", as is now recited in the claims.

Thus, it has been shown that several limitations of the claims are not met by these references and this rejection is overcome.

Kao, Pinkoski, and Thompson

Claims 5-6, 9-12, 20-21, and 24-27 are rejected under 35 U.S.C. §103 as being unpatentable over Kao in view of Pinkoski and Thompson (U.S. Patent 5,463,772). This rejection is respectfully traversed.

It is noted that all of these claims are dependent on the claims discussed above. It is therefore submitted that these claims inherit the allowability of their parent claims and are now allowable.

Additionally, many of these claims contain subject matter that is not shown by the references relied on, specifically limitations to encoding the file system identifier or having an encoded file system identifier. These limitations have been read on Thompson and will be further discussed below.

Kao and Thompson

The office action rejects Claims 13-15, 28-30, and 32 under 325 U.S.C. 103(a) as being unpatentable over Kao in view of Thompson et al. (5,463,772). This rejection is respectfully traversed.

Representative claim 13 reads,

13. (Amended) A method, in a requested file system server, for servicing a request, comprising:
 - receiving a request for a file system object, wherein the request includes an encoded file system identifier, which has been encoded using a predetermined, system wide encoding algorithm;
 - decoding the encoded file system identifier to form a file system identifier corresponding to a requested file system;

¹ Pinkoski, column 3, lines 10-21

looking up a path for the requested file system in a file system identifier data structure; and
retrieving the root of the requested file system using the path for the requested file system.

The rejection states,

"In combination, Kao and Pinkoski do not explicitly teach encoding the file system identifier, wherein the redirection message further includes the encoded file system identifier.

However, Thompson teaches data compression on the file systems architecture (col. 8, lines 12-68, col. 20, lines 1-18 and col. 21, lines 7-18)."²

While it is true that the cited sections of **Thompson** discuss data compression on disk storage, it is submitted that data compression is not the same as encoding the file system identifier. Data compression, as the name implies, is performed on the data, the contents of a file, while encoding the file system identifier is performed on the identifier, or name, of the file.

Secondly, it is submitted that one of ordinary skill in the art would not equate compression with encoding, as these embody two different concepts. The online site, **Webopedia** (www.webopedia.com), which bills itself as the number one online encyclopedia dedicated to computer technology, defines **data compression** as simply "Storing data in a format that requires less space than usual", noting that "Data compression is particularly useful in communications because it enables devices to transmit or store the same amount of data in fewer bits." This site does not bother to define encoding, although the online Merriam Webster online dictionary defines the verb **encode** as "to convert (as information) from one system of communication into another; especially : to convert (a message) into code".

Thus, this rejection is not using the commonly understood meanings for the words in the claims (note that claim 13 above was not amended), but is interpreting these terms in a manner that would not be used by one of ordinary skill in the art.

Again, it has been shown that the references relied on do not show the claim limitations. This rejection is overcome.

It is submitted that the rejection of all outstanding claims under U.S.C. 103 has been overcome.

² Office action of 5/17/2004, page 8, lines 3-7

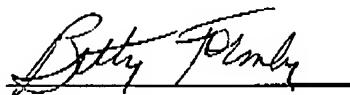
Conclusion

It is respectfully urged that the subject application is patentable over Kao, Pinkoski, and Thompson and is now in condition for allowance.

The examiner is invited to call the undersigned at the below-listed telephone number if in the opinion of the examiner such a telephone conference would expedite or aid the prosecution and examination of this application.

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Respectfully submitted,



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